

9 points

Name _____ Date _____

Algebra 2 PSSA Quiz #2

(2p)

1. 3 construction workers can build a house in 2 months
How long it will take 5 workers to build the same house.

$$3 \text{ CONSTR. WORK} \cdot 2 \text{ MON} = 6 \text{ CONSTR. WORK} \cdot \text{MON}$$

$$\frac{6 \text{ CONSTR. WORK} \cdot \text{MON}}{5 \text{ CONSTR. WORK}} = \frac{6}{5} = 1.2 \text{ MON.}$$

2. Your salary is \$1000 a month. You work 21 days and 4 weeks a month, and 11 months a year.

(1p)

What is your daily pay?

$$\frac{1000}{21} \approx \$47.62$$

(1p)

What is your biweekly pay?

$$\frac{21}{2} = 10.5 \text{ days (2 weeks)}$$

$$\$47.62 \cdot 10.5 = \$485.71$$

(1p)

What is your annual pay?

$$\$1000 \cdot 11 = \$11,000$$

(2p)

If you work 12 months, by how many percent your annual salary will increase?

$$12 \cdot \$1000 = 12,000$$

$$\frac{11,000}{12,000} = \frac{100\%}{x\%}; \quad x = \frac{12,000 \cdot 100}{11,000} \approx 109.1\%$$

$$109.1 - 100 = 9.1\%$$

3. The magnifying glass has a scale factor (magnification) of 12. The specimen that you study using this magnifying glass is 1mm. What will be the image size that you will observe? Express the result in meters (m).

(1p)

$$1 \text{ mm} \cdot 12 = 12 \text{ mm}$$

(1p)

$$\frac{1 \text{ m}}{x \text{ m}} = \frac{1000 \text{ mm}}{12 \text{ mm}};$$

$$x = \frac{12}{1000} = 0.012 \text{ m}$$